D D Kosambi: The Scholar and the Man

Meera Kosambi

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Some have greatness thrust upon them, and some have expectations of greatness thrust upon them – as do I, being a third-generation Kosambi. All my academic life has been a struggle to live up to the iconic name that locates me immediately within an intellectual context in any academic circle in the world. Writing about my father D D Kosambi has not been an easy task as his intellectual contributions span an incredibly wide range of academic disciplines. In this article I will attempt to indicate the amazing scope of his work, prefacing it with a short biographical sketch, and concluding by touching upon some facets of his personality.

1. Early Education

D D Kosambi was born on 31 July 1907 in a Gaud Saraswat Brahmin family of Goa where he spent his first few years, speaking Konkani as his mother tongue. He had his early schooling in Pune where his father, Acharya Dharmanand Kosambi, a pioneering 'Buddhist scholar', was then based, teaching Pali at Fergusson College. Dharmanand had already been invited once as visiting faculty to Harvard University, to work on some Pali Buddhist texts. On his second visit to Harvard in 1918, he took along his oldest daughter, nineteen-year-old Manik, and his eleven-year-old son Damodar, known to all by his nickname 'Baba', leaving the two younger daughters with their mother in Goa. Manik was enrolled in Radcliffe College which was then a woman's college (affiliated to Harvard which was a men's college) and Baba in the Cambridge Grammar School and later the Cambridge Latin School. After four years, when Manik graduated from Radcliffe, Dharmanand returned to India with her; Baba stayed behind alone in a hostel until he finished school in 1924. (Dharmanand provided money for his expenses; additionally Baba did summer jobs working on farms and in orchards.)

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Subsequently, he spent a year in India with his parents, and Dharmanand tried to enrol him in a college in India. But that proved difficult because of the different educational systems and therefore Dharmanand took Baba back and enrolled him in Harvard College in January 1926.

In addition to his studies, Baba also concentrated on physical fitness during his school days (when he was a Boy Scout) and later college days, working out in the gymnasium, swimming, rowing, going on long hikes, and developed a splendid physique. Academically he did brilliantly at Harvard. A college friend remembers Baba's inexpensive room, with a photo of Gandhiji as the only decoration, and lined with shelves full of books on many subjects and in many languages. He also recalled that Baba could be a fun-loving and boisterous undergraduate.

In his essay, 'Steps in Science', which sketches his intellectual autobiography, Kosambi speaks with appreciation of the excellent school and college education he had received in the USA. He had majored in mathematics, and studied, along with other subjects, the mandatory European languages – Greek, Latin, French and German – on which he was to build later. The rich library collections had exposed him to the wonders of all branches of knowledge, and he mentions being most impressed by the writings of Alexander von Humboldt, Einstein, Freud and H G Wells, and the lives of Pasteur and Claude Bernard. Given his intellectual capacity and energy, Kosambi could have made his mark in any one of these branches, but he chose mathematics as he could not resist its fascination.

After graduating from Harvard with high distinction ('summa cum laude') in 1929, Kosambi found it difficult to receive a scholarship for further studies, partly because of the economic depression, and partly because his mathematics professor was unsure of his sole commitment to the subject, given his tendency to traverse over a wide field of disciplines (with his father's encouragement). He returned to India for good. Subsequently he could have emigrated to the West, but chose to stay in India close

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to his cultural roots and Indological research materials, except for occasional visits.

2. Kosambi the Mathematician

Kosambi taught mathematics all his life, until retirement – starting with Benares Hindu University immediately upon returning to India (1929–31). Here he was not in tune with the ideological ethos of the founder and vice-chancellor, Pandit M M Malaviya, who was a friend of Dharmanand's, although he threw himself into teaching with enthusiasm and even held additional classes for students in German which he believed to be the language of science. He was soon recruited by Professor Andre Weil, a mathematician from Paris who had been invited to head the department at Aligarh Muslim University. Here he collaborated on mathematical research with another colleague, Dr.Vijaya Raghavan. From Banaras, and later from Aligarh, he published research papers in mathematics, in Indian as well as French and German journals. Students were impressed by this young unconventional professor, who, apart from often sharing meals with them, also played hockey with them. In 1933, following the departure of his two mathematics colleagues, Kosambi left Aligarh and joined the faculty of Fergusson College at Pune. Here he became known as an exacting professor, not easy to understand and not popular with those who expected to be spoon-fed, but highly admired by bright and serious students who were willing to work hard. He also managed the library of Indian Mathematical Society. His colleagues in mathematics, though highly qualified, had given up research and focused on institutional matters. Their resentment of his intellectual pursuits and perceived arrogance was essentially a clash of two radically different academic systems and cultures – Harvard and Pune which measured mathematical ability solely by the British degree of 'wrangler'. It was also a clash of the relatively egalitarian American ethos and the convention-bound, hierarchical Indian culture.

After fourteen years he left Fergusson College because of a serious difference of opinion with the authorities, and joined the newly established Tata Institute of Fundamental Research (TIFR) in Mumbai in 1946, invited by the noted scientist Dr. Homi Bhabha who was the director (and about the same age). Their initially warm collegial relationship soured after a few years, mainly due to a clash of personalities. A major divergence was ideological – the capitalist-Marxist divide apart, their perspectives on atomic energy were contradictory. Bhabha was involved in developing India's atomic energy, with full support from Pandit Nehru, while Kosambi repeatedly articulated his vision of solar energy as most appropriate for a developing country like India. Additionally, Kosambi's lack of sole concentration on mathematics served as an excuse. His contract at TIFR was not renewed in 1962; he had himself been well enough aware of the situation to expect to be relieved of his post much earlier.

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3. Archaeological Field Work

In 1964 he was appointed Scientist Emeritus by the Council for Scientific and Industrial Research and affiliated himself to the Maharashtra Association for the Cultivation of Science at Pune. About this time he also accepted an invitation from Major-General E B Habibullah, commandant of the National Defence Academy at Khadakwasla near Pune, to found the Archaeological Society in the 'hobbies' section of the Academy. With an enthusiastic band of instructors and cadets, he hunted for microliths and megaliths, rock carvings and other artefacts across the Deccan tract (as he did with his group of dedicated though informal students). In the process, he discovered the Karsambla caves in the forest at the foot of the Western Ghats below Bhaje caves, which Habibullah describes as containing 'evidence of frescos and decorations that must have made Ajanta provincial', though in a state of decay due to greater exposure to the weather. This discovery resulted from Kosambi's thesis that Buddhist caves were located at a day's march of merchant caravans along major trade routes (and not at inaccessible spots suitable for hermits, as had been believed).

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4. Activities in the International Sphere

During all this time he won several prizes – the first Ramanujan Memorial Prize in 1934 and a special Bhabha Prize in 1947, among others. He was invited to go abroad several times. In 1948–49, he was a UNESCO fellow to the USA and UK for electronic calculating machine research. In the winter semester of 1949, he was a Visiting Professor in Path-Geometry at Chicago and later a guest of the Institute for Advanced Study at Princeton where he had extensive discussions with Einstein. In 1955 he was invited by the Soviet Academy of Sciences to lecture and to attend their first conference on the peaceful uses of atomic energy. He was invited by the Academia Sinica (Beijing, China) to suggest statistical methods for the forecasting of food-crops and quality control in industry. For lectures on Indian history, he was invited by the University of London and the School of Oriental and African Studies, where he first met Prof. A L Basham. He attended conferences and gave lectures in most countries of the world and kept up an active, worldwide correspondence.

Since 1950 Kosambi was seriously involved in the World Peace Council. In June 1955, he headed the Indian delegation (the largest) to the World Peace Conference at Helsinki, Finland, which was chaired by the famous French Nobel Laureate Frederic Joliot-Curie, and attended by J D Bernal and Jean-Paul Sartre, among others. In Basham's own words, Kosambi seemed to have only three interests, which filled his life to the exclusion of all others – ancient India, in all its aspects, mathematics and the preservation of peace. He worked hard and with devotion for all three, according to his deep conviction.

5. Family Life

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In the meanwhile, in 1931 Kosambi had married Nalini Madgavkar of Mumbai, who had graduated in mathematics and Sanskrit from Wilson College,. The arranged marriage of the fiery intellectual and committed Marxist, to the gentle, soft-spoken young woman from a wealthy and progressive family, with conventional

accomplishments (and some unconventional ones like tennis, swimming and horse-riding), has been a puzzle to many; the reason must have been Kosambi's extreme shyness with women.

The couple eventually settled down in Pune in the then Bhandarkar Oriental Research Institute colony. The two daughters, Maya and Meera, studied at the nearest Marathi-medium school (because of Baba's insistence on the mother-tongue being the only appropriate medium for school education) and then Fergusson College. Maya did her MA in Psychology, got married in 1960 and went abroad. I did my MA in English Literature and briefly taught at Fergusson College, becoming the third-generation Kosambi to do so – Dharmanand had taught Pali there and D D taught mathematics and statistics. In 1966, I went abroad for further studies. This happened after Baba's death on 29 June 1966, shortly before his fifty-ninth birthday.

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6. Forays into other Disciplines

Kosambi's astounding intellectual journey effectively demonstrates the meaninglessness of disciplinary boundaries and the insistence on formal training and degrees as the only marker of knowledge.

For some 20 years, Kosambi's main work lay in tensor analysis and 'path-geometry' (a term he coined). While engaged primarily in mathematics, he wrote a paper on genetics which was very successful. What became known as 'the Kosambi formula for chromosome mapping' was widely used by professional geneticists. The formula was an advance over the existing chromosome theory of heredity, comprising the arrangements of genes and their recombination through the phenomenon of crossing over.

As a mathematician, Kosambi taught himself statistics by selecting practical problems to solve. One of them was a study of punch-marked coins, undertaken about 1940. The only large hoard available was that of Taxila coins, and as a control group he used modern coins. After weighing over 7,000 modern coins (making a total of about 12,000 coins), he says, "it was possible

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to lay the foundations of numismatics as a science, as contrasted to a branch of epigraphy and archaeology." His articles on numismatics were numerous enough to merit publication in a separate volume entitled *Indian Numismatics*, though this happened years after his death.

The study of old coins aroused Kosambi's intellectual curiosity about the kings who struck the coins. The study of old records, he says, 'meant some mastery of Sanskrit, of which I had absorbed a little through the pores without regular study,' having worked informally with his father. He acquired the requisite mastery by applying his usual problem-solving method. He took up a specific work, the simplest being Bhartrihari's three *shatakas*, or centuries, of epigrams (*subhashitas*). His first articles on the topic were published in 1945. But Bhartrihari's text was defective, necessitating text-criticism, which he undertook by studying about 400 manuscripts. During the five years that the process took, he 'rescued over fifty poets from the total oblivion to which lovers of Sanskrit had consigned them, not to speak of adding to our meagre knowledge of many others.' In the process he had, in his own words, 'fallen into Indology, as it were, through the roof.' By now Kosambi had become so renowned for his text-criticism, that he was invited to edit the text of Vidyakara's *Subhashitaratnakosha* for the Harvard Oriental Series. (His text criticism was modelled on Dharmanand's edition of the Pali *Visuddhimagga*, also published in the Harvard Oriental Series, in which he had possibly assisted him.) In his Preface, the series editor Prof. Daniel H.H. Ingalls acknowledges that 'Kosambi has assembled here a wealth of precise data which not only aid the understanding of the present anthology but furnish precious material for the historian of Sanskrit literature'. Kosambi's insistence on treating Sanskrit texts and later also ancient myths as sources of data for analysing social and cultural life of their period of origin rather than as sacred words beyond analysis also led the more conservative Sanskritists in India to perceive him as an iconoclast.

7. Kosambi as a Historian

In history-writing, Kosambi is credited with having wrought a revolution through his redefinition of the nature and scope of history.

In the meanwhile, his intellectual journey had taken Kosambi much farther afield. From Sanskrit which he had mastered, it was a natural progression to ancient Indian history, the social setting of Sanskrit literature. In history-writing, Kosambi is credited with having wrought a revolution through his redefinition of the nature and scope of history. For one thing, he dismantled the entrenched notion of fixed periods – Ancient, Medieval and Modern periods of Indian history. For another, he designed an integrated methodology for harnessing diverse sources. In his famous and seminal essay – which he labels a 'note' – entitled 'Combined Methods in Indology', he critiques the prevalent practice of placing sole reliance upon linguistic sources. Rather, 'the linguistic study of the problems of ancient Indian culture would be more fruitful if supplemented by an intelligent use of archaeology, anthropology, sociology and a suitable historical perspective.' Accordingly, he supplemented his archival sources by extensive fieldwork.

Kosambi's first book on ancient Indian history, the path-breaking *An Introduction to the Study of Indian History* (1956), became so highly influential that, in Prof. Irfan Habib's opinion, within five years of its publication, it was considered mandatory reading for professors and students of Indian history all over the world. The book, together with two more that followed – *Myth and Reality* (1962) and *The Culture and Civilisation of Ancient India in Historical Outline* (1965) – has been translated into many languages within and outside India. Such was the resonance of these books among historians, that some like Prof. Romila Thapar have regarded him informally as a guru without having actually studied with him.

How exactly Kosambi selected Marxism as his basic historical framework is not known, though the early decades of the twentieth century had witnessed a strong interest in Marx and socialism in the USA. D D had probably acquired his knowledge and interest in Marxism from his father and from his intellectual

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milieu, and expanded them further through his copious reading. Kosambi's disagrees with Marx's thesis of the small unchanging and self-sufficient villages, and his argument that the villages produced only what they required and not commodities for exchange. Kosambi finds this analysis 'misleading', because the self-sufficiency of Indian villages has been exaggerated.

Kosambi's original analysis of the nature of Indian feudalism and his concepts of 'feudalism from above' and 'feudalism from below' have also been the subject of a great deal of discussion – and controversy – among historians of India. This extensive re/writing of history elicited the expected and contradictory responses. He was praised by some as a pioneer of genuine Marxist scholarship of the Indian past, and demonized by others as a nasty iconoclast using an alien framework inappropriate for the study of Indian cultural heritage.

8. The Personality

All his life, Kosambi remained very health- and fitness-conscious. He would walk every morning to the railway station more than three miles away, with his backpack filled with books, to catch the Deccan Queen to go to work at TIFR in Mumbai (having found the Mumbai climate too disagreeable to stay there. In fact, the preface to his *Introduction to the Study of Indian History* mentions the 'Deccan Queen' as his address.

The contradictions and complexities that make up any individual were perhaps accentuated in Kosambi's case. As a person he could be warm and effusive or abrasive and abrupt, depending on his frame of mind.. But while he did not always get along with famous academics, he always hit it off with villagers on his field trips.

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His social life was usually part of his intellectual life (and both were outside the ambit of the family.) Kosambi's devoted band of informal students who visited the house often and accompanied him on field trips was an international group – comprising Indians, of course, and also Americans, Europeans, Japanese and

others. He taught them a lot, as they have often shared with me, and probably expected a lot from them in turn – as he did indirectly from his two children. The noted German Indologist and ethnographer Gunther Sontheimer who revered him as a guru, must have felt the same pressure. Gunther was very complimentary about my PhD thesis, remarking how proud my father would have been to see it. Being more forthright and honest (DDK-style), I responded that he would probably have given me a solid firing for a shoddy piece of research, for who could pass muster with him? Gunther replied that if he stopped to think of my father's reaction to everything that he himself wrote, he would have to go to the nearest tree and hang himself!

Culturally, Kosambi was indeed a citizen of the world, and also – with his unique combination of intellectual width and depth, nationalist commitment to India and its culture, and American habits and mannerisms – a misfit everywhere. He was a larger than life personality, and even his personal life was an important statement. His integrity – personal and intellectual – was beyond question. Secularism formed the core of his personality. He made no distinction based on religion, caste, race, or gender, and brought up his children with the same secular ideology. He has always had a unique, international identity as a brilliant, profound and original scholar straddling many fields of knowledge. And this identity will endure as long as scholarship itself endures.

Suggested Reading

[1] **D D Kosambi, 'Steps in Science' in *Science and Human Progress*, op cit, pp.193–205, 1974.**

[2] **D D Kosambi, *Indian Numismatics*, Orient Longman, New Delhi, 1981.**

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